

KEWEENAW WATERWAY, AT PRINCESS POINT, MICH.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE CHIEF OF ENGINEERS, REPORTS ON
PRELIMINARY EXAMINATION AND SURVEY OF KEWEENAW
WATERWAY, PORTAGE LAKE SHIP CANAL, MICH., WITH A VIEW
TO MAKING A CUT-OFF AT PRINCESS POINT.

MARCH 16, 1914.—Referred to the Committee on Rivers and Harbors and ordered to
be printed, with illustration.

WAR DEPARTMENT,
Washington, March 14, 1914.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

SIR: I have the honor to transmit, herewith, a letter from the Chief of Engineers, United States Army, dated 13th instant, together with copies of reports from Capt. E. D. Peek, Corps of Engineers, dated May 1 and September 10, 1913, with map, on preliminary examination and survey, respectively, of Keweenaw Waterway, Portage Lake Ship Canal, Mich., made by him in compliance with the provisions of the river and harbor act approved March 4, 1913.

Very respectfully,

HENRY BRECKINRIDGE,
Acting Secretary of War.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, March 13, 1914.

From: The Chief of Engineers, United States Army.

To: The Secretary of War.

Subject: Preliminary examination and survey of Keweenaw Waterway, at Princess Point, Mich.

1. There are submitted herewith, for transmission to Congress, reports dated May 1 and September 10, 1913, with map, by Capt.

E. D. Peek, Corps of Engineers, on preliminary examination and survey, respectively, of Keweenaw Waterway, Portage Lake Ship Canal, Mich., with a view to making a cut-off at Princess Point, called for by the river and harbor act approved March 4, 1913.

2. Keweenaw Waterway is a navigable channel 25 miles long across Keweenaw Point, a peninsula on the south shore of Lake Superior lying about midway between Sault Ste. Marie and Duluth. The waterway has a clear width of 120 feet and a depth of 20 feet at mean low water throughout its entire length, but at Princess Point the channel makes a sharp turn, having a radius of 835 feet for a distance of a quarter of a mile. The district officer states that the larger vessels have experienced difficulty in making the turn at this point, and a number of groundings and collisions have occurred during the last five years. The improvement desired is the making of a cut-off to remedy this difficulty. He submits two plans for the improvement, one contemplating a straight channel at an estimated cost of \$155,280, and the other a curved channel at an estimated cost of \$138,000. The latter plan is not only less costly but appears to be preferred by navigators, and the district officer is of opinion that the locality is worthy of improvement in accordance with this plan. The division engineer expresses the opinion that Keweenaw Waterway is not worthy of improvement by the United States to the extent of making a cut-off at Princess Point.

3. These reports have been referred, as required by law, to the Board of Engineers for Rivers and Harbors, and attention is invited to its accompanying report, dated January 27, 1914, concurring with the views of the district officer.

4. After due consideration of the above-mentioned reports, I concur with the views of the district officer and the Board of Engineers for Rivers and Harbors, and therefore report that the further improvement by the United States of Keweenaw Waterway is deemed advisable to the extent of making a cut-off at Princess Point, under the plan contemplating a curved channel, as shown on accompanying map, 200 feet wide on bottom and 20 feet deep at mean low water, at an estimated cost of \$138,000, the full amount of which should be provided in one appropriation. The cost of maintaining the waterway will not be increased by the improvement now proposed.

DAN C. KINGMAN,
Chief of Engineers, United States Army.

REPORT OF BOARD OF ENGINEERS FOR RIVERS AND HARBORS
ON SURVEY.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
January 27, 1914.

To the CHIEF OF ENGINEERS, UNITED STATES ARMY:

1. This is a report on preliminary examination and survey of Keweenaw Waterway, Portage Lake Ship Canal, Mich., with a view to making a cut-off at Princess Point.

2. The Keweenaw Waterway is a navigable channel 25 miles long across Keweenaw Peninsula, Mich., through which a navigable chan-

nel 20 feet deep at mean low water has been provided. Princess Point is situated at the sharpest bend on this waterway, where considerable difficulty and inconvenience have been experienced by navigation interests, particularly with vessels 350 feet and more in length. A number of vessels have gone aground at this locality, and there have been some collisions. Some relief was given at this point a few years ago by a moderate cutting off of the point, but groundings continued, and later a series of pile clusters were driven along the shore line to facilitate the releasing of vessels which go aground. The improvement now desired is a cut across this point 200 feet wide, increasing the radius of curvature from 835 feet to 4,000 feet.

3. The importance of this waterway is indicated by the amount of commerce using it, which is given as 2,406,618 tons, 48 per cent of which passed directly through the waterway, while 52 per cent was delivered to or shipped from some point on the waterway. The number of vessels, exclusive of tugs, used in handling this commerce is reported as 1,922.

4. Based upon the survey, the district officer presents a plan and estimate for the improvement, which involves a cut about three-fourths of a mile in length, 200 feet wide on the bottom, and 20 feet deep at mean low water, corresponding with the project depth in the balance of the waterway. The estimated cost of this plan following a curved line is \$138,000 and by a straight line \$155,280. While the cost of maintenance is estimated at \$1,000 per annum, this will not figure as a new item, as this amount is probably less than would be required for the present channel. The district officer believes the locality worthy of improvement in accordance with the estimate for the curved channel. For reasons given the division engineer does not concur in this view.

5. The board was not fully convinced by the facts presented in the report of the district officer of the necessity and advisability of the improvement proposed, and parties in interest were invited to submit their views on the subject. Several communications were received from important navigation interests recounting a number of accidents and groundings at Princess Point and urging the proposed improvement as necessary for the safety of navigation, particularly for the larger and more valuable vessels.

6. The investigations of the board lead it to the conclusion that the improvement is advisable in the interests of the general commerce and navigation of the Great Lakes, and it therefore recommends, in concurrence with the views of the district officer, the adoption of the project proposed by him for the curved channel, at an estimated cost of \$138,000. The total amount of the estimate should be made available in one appropriation.

7. In compliance with law, the board reports that there are no questions of terminal facilities, water power, or other subjects so related to the project proposed that they may be coordinated therewith to lessen the cost and compensate the Government for expenditures made in the interests of navigation.

For the board:

W. M. BLACK,
Colonel, Corps of Engineers,
Senior Member of the Board.

157028

PRELIMINARY EXAMINATION OF KEWEENAW WATERWAY AT PRINCESS POINT, MICH.

ENGINEER OFFICE, UNITED STATES ARMY,
Duluth, Minn., May 1, 1913.

From: The District Engineer Officer.

To: Chief of Engineers, United States Army

(Through the Division Engineer).

Subject: Preliminary examination of Keweenaw Waterway at Princess Point, Mich.

1. In compliance with department letter of March 18, 1913, the following report is submitted upon a preliminary examination of Keweenaw Waterway, Portage Lake Ship Canal, Mich., with a view to making a cut-off at Princess Point.

2. *Description.*—The name Princess Point refers to a sharp bend in Portage River which forms part of the improved waterway across Keweenaw Point, Mich. The locality is clearly shown on the accompanying map,¹ and on the same map is also indicated by broken lines a possible location for a cut-off channel. This is by far the sharpest bend in the waterway and the only one which has caused serious trouble to vessels. The channel here has a curve of 835 feet radius for a distance of a quarter of a mile, or what would be known as a 7-degree curve on a railroad. The larger class of vessels has always found difficulty in making the turn at this point. Accompanying this report is a detailed statement of groundings and collisions which have occurred at this locality during the last five years.

3. From this statement it appears that during this period there were 15 vessels reported having run aground, and 2 collided. These vessels were of various sizes, mostly from 300 to 540 feet in length. Some of these pulled themselves off by running lines to the Government pile clusters built for this purpose, and others were released with the aid of a tug or another vessel. The length of time the vessel was detained by the grounding was from one-half hour to 10 hours. Some of the vessels suffered damage. It is noted that fewer groundings occurred during the past year than before. This is due to the fact that many vessels only enter the canal via the Upper Entrance, proceed to Hancock or Houghton, discharge or take on their cargoes, and depart again by going back over the same route and around Keweenaw Point. This increases their mileage between Duluth and the Sault, shows a loss of time, and increase in running expense. This seems to be preferable, however, to the larger vessels, than to take the added risk of passing Princess Point.

4. The smaller and medium sized classes of vessels by slowing down and using care quite readily pass through the curve. It is possible for vessels of the largest size to get through, but they can scarcely do so without striking the bank. There are no tugs available nearer than Houghton for assisting vessels through or for releasing them when aground. For these reasons the larger vessels usually avoid this portion of the waterway as far as possible.

5. Some years ago an attempt was made to remedy the situation by widening the channel around the bend, and it was given a width of 375 feet of 20-foot water, the regular width through the waterway being

¹ Not printed.

120 feet. This afforded partial relief, but groundings continued. Later (in 1905) a number of pile clusters were driven along the shore line on each side of the channel at this locality to aid vessels in releasing themselves after running on the bank while making this turn. These have proved useful, but they do not prevent the occurrence of groundings.

6. *Possible improvement.*—A new channel is suggested and shown on the accompanying map for a cut-off, to entirely avoid the sharp turn. This runs through low ground, mostly swamp, is 200 feet wide, is on a curve of 4,000 feet radius, and length about three-fourths mile. Depth to be same as in the regular channel. Such a cut-off could be navigated without difficulty or danger by any of the vessels on the lakes, and would probably answer the intended purpose, subject, however, to further consideration. It is not believed that the construction of the cut-off would present any engineering difficulty.

7. *Commerce, present and prospective.*—In the season of 1912 the amount of freight passing through this waterway was 2,406,618 tons of 2,000 pounds, the value of which was \$86,582,813. Of this commerce 48 per cent passed entirely through, eastbound or westbound, and 52 per cent was shipped to or from the several ports on the waterway. The above figures are not far from the average for the last five years and may be taken as an indication of prospective commerce. The number of vessels, exclusive of tugs, which used the waterway in 1912, was 1,922, with a net registered tonnage of 2,377,853.

8. The construction of the cut-off would probably increase the above figures somewhat. It would not as a rule divert the large class of vessels from the course in the lake, for the distance between Duluth and the Sault around the outside of Keweenaw Point is 5 miles shorter than that through the waterway and admits of greater speed, but in time of rough weather some of them might be glad to use the waterway for its shelter. A vessel upbound could then enter and pass through the waterway as far as the Lily Pond harbor of refuge, near the upper end, and wait there for weather. It would then be about 60 miles nearer its destination than if it had anchored at Bete Grise Bay. Vessels downbound could also run into the upper entrance and proceed through the waterway to the new Portage River harbor of refuge, now under construction, and tie up there, with a saving of time over that required to pull out from the Lily Pond Harbor and pass around Keweenaw Point. For vessels bound from Marquette to Duluth, Two Harbors, or Ashland there would be a material saving in distance by taking the waterway over the course around the point.

9. *Terminals, etc.*—Owing to the nature of the proposed improvement the questions relating to the establishment of terminal and transfer facilities, and the development and utilization of water power for industrial and commercial purposes do not enter into consideration.

10. *Opinion of others.*—Attention is invited to the accompanying letters ¹ which have been received in response to a circular letter of inquiry, which was sent by me to a number of persons and firms who were believed to be interested in the proposed improvement, some of whom are practical navigators and understand the nature of the difficulty which is sought to be remedied. These replies are

¹Not printed.

favorable to the proposed improvement. No public hearing was held in connection with this examination.

11. It may be added that a cut-off at Princess Point has been recommended by the officers of the Corps of Engineers in charge of this district since and including the year 1905, as stated in their annual reports to the Chief of Engineers, although no examination or survey has been previously ordered.

12. *Recommendation.*—In view of the large amount of commerce which would be assisted and benefited by the proposed cut-off, and the probable increase in the use of the waterway that would result therefrom, as indicated in the foregoing data, I am of the opinion that the locality is worthy of improvement by the United States.

E. D. PEEK,
Captain, Corps of Engineers.

[First indorsement.]

OFFICE DIVISION ENGINEER, LAKES DIVISION,
Buffalo, N. Y., May 6, 1913.

To the CHIEF OF ENGINEERS:

1. A survey and estimate is deemed essential to a determination of the advisability of the proposed improvement, implying a considerable cost.

2. Such survey is recommended to be made for a curved channel as proposed herein by the district officer, and also for a straight channel with wide turning areas at the ends, located with a view to simplifying and reducing cost of buoying and lighting.

J. G. WARREN,
Colonel, Corps of Engineers.

[Third indorsement.]

BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
May 19, 1913.

To the CHIEF OF ENGINEERS, UNITED STATES ARMY:

For reasons stated herein, the board concurs with the district officer and the division engineer in recommending a survey in order to determine the extent and advisability of the improvement. The board agrees with the division engineer in his suggestion for alternative plans.

For the board:

WM. T. ROSSELL,
Colonel, Corps of Engineers,
Senior Member of the Board.

SURVEY, KEWEENAW WATERWAY, AT PRINCESS POINT, MICH.

ENGINEER OFFICE, UNITED STATES ARMY,
Duluth, Minn., September 10, 1913.

From: The District Engineer Officer.

To: Chief of Engineers; United States Army
(Through the Division Engineer).

Subject: Survey of Keweenaw Waterway at Princess Point, Mich.

1. In compliance with department letter of May 23, 1913, the following report is submitted upon a survey of Keweenaw Waterway,

Portage Lake Ship Canal, Mich., with a view to making a cut-off at Princess Point.

2. *Survey*.—The field work on the survey was made under my direction July 14–31, 1913, to supplement data already on hand. This survey included an examination of the locality with a view of locating the curved channel as outlined in my preliminary examination, and also the straight channel as required by department letter above referred to. The results of this survey are shown on a map which accompanies this report.

The survey shows the elevation of the ground to be generally about 1 foot above low-water datum. The straight channel would cut through a point for about 500 feet where the ground has an elevation of about 5 feet above low-water datum, while the curved channel would pass through land which is practically only 1 foot above low-water datum.

In order to determine the nature of the material that might be encountered and to learn what appliances might be required for its removal, numerous test holes were put down, the positions of which are indicated on the map. These holes were jetted by means of a half-inch pipe, and the material was found to be sand to a depth of from 10 to 15 feet, below which hardpan, bowlders, and sand were found to a depth of 25 feet.

When no rocks were encountered necessitating the moving of the jet, the holes were put down to a depth of 25 feet in from 4 to 15 minutes. These test holes tend to show that all the material may be removed by a dipper dredge, and the greater portion by means of a hydraulic dredge, the only portion which might not be removed by a dipper dredge being large bowlders which would have to be removed by other means.

3. For a description of the locality and statement of groundings and collisions which have occurred, attention is invited to my report on the preliminary examination of "Keweenaw Waterway, Portage Lake Ship Canal, Mich., with a view to making a cut-off at Princess Point."

4. *Alternative cut-off channels*.—Since my preliminary examination report was made, an alternative cut-off channel has been suggested. This is shown in broken lines on the accompanying map. It is a straight cut across Princess Point which connects with the old channel by sharp turns at points about coincident with the termini of the proposed curved channel shown on the map by solid lines.

5. The map showing the two proposed plans for the cut-off has been examined by numerous captains, who navigate this waterway, with the view of obtaining their opinions as to which is the more desirable location for navigation purposes. With but one exception these navigators favored the curved channel as being more easily and safely navigated. The one master who favored the straight channel stated there was little choice, but thought a straight channel with range lights easier to navigate at night.

6. The cost of lighting either of the cut-off channels will be less than for the present channel. It is thought that five beacon lights, three of which would serve as ranges and four as passing lights, would be ample for the curved channel and its approaches. With a range at but one end of the straight channel five lights would be required. If a range is maintained at each end of the straight

channel, two lights more would be required than are considered necessary for the curved channel.

The possible locations of beacon lights for the cut-off channels are shown on the accompanying map by concentric circles.

7. *Plan of improvement.*—The proposed channel runs through low ground, is 200 feet wide and about three-fourths of a mile long. The curved plan involves a curve with a 4,000-foot radius which may be navigated without difficulty, the depth to be 20 feet, the same as projected for the waterway. The survey of the proposed channel shows that the material is such as can be excavated by the ordinary dipper dredge and its construction would present no engineering difficulties.

8. *Commerce, present and prospective.*—Attention is invited to paragraphs 7 and 8 of my report on the "Preliminary examination of Keweenaw Waterway, Portage Lake Ship Canal, Mich., with a view to making a cut-off at Princess Point," as to the commerce through the waterway. In addition it may be stated that one company operating eight vessels which trade on Lake Superior and in Keweenaw Waterway has issued orders to their vessel captains not to go out by the lower entrance when loaded because of the difficulties and dangers attendant upon getting around Princess Point. All these vessels and doubtless many others which go out of the upper entrance at present would use the new cut-off channel when completed, thereby saving three hours' time each trip and also the dangers incident to open lake navigation around Keweenaw Point. Vessel masters consider the present channel around Princess Point one of the most difficult to navigate on the chain of lakes. The banks of the channel contain bowlders which have damaged many vessels. This and the crookedness of the channel combined make vessel men very reluctant in using it.

9. Estimate of cost of alternative channels:

Straight channel:

Dredging 680,000 cubic yards, at 18 cents.....	\$122, 400
Purchase of land.....	7, 000
Administration and contingencies, 20 per cent.....	25, 880
Total cost of improvement.....	155, 280

Curved channel:

Dredging 600,000 cubic yards, at 18 cents.....	108, 000
Purchase of land.....	7, 000
Administration and contingencies, 20 per cent.....	23, 000
Total cost of improvement.....	138, 000

10. *Maintenance.*—The annual cost of maintenance, including removal of shoals and administration, is estimated at an average of \$1,000 per annum. This channel will be a part of the waterway, and upon its completion the present channel around Princess Point will no longer require a charge for maintenance. The cost of maintenance of the whole waterway will, therefore, not be increased by the improvement of the cut-off channel, and in all probability will be somewhat reduced as the cut-off channel will be shorter and have less curvature than the present channel.

The reduction in curvature reduces the wash against the banks from the propellers of passing vessels, thus diminishing the amount of dredging necessary to maintain a navigable depth.

11. Rate at which work should be prosecuted:

The proposed work is all dredging, and under favorable conditions the channel could be completed in one season by a contractor having sufficient plant.

No part of the improvement will be available for navigation until the whole is completed. As there is no dredging plant located in the waterway, a plant will have to be towed there for the work. If the work is let in one contract it will avoid the possible necessity of towing to the location more than once and for this reason a lower price may be expected. It is therefore recommended that the initial appropriation be for the full estimated cost of the improvement, this being the most economical and advantageous to the United States.

12. *Recommendations.*—The curved channel is recommended for improvement for the following reasons: It will cost less to construct (see par. 9). It meets with the approval of navigators. The cost of maintenance will be practically the same as for the straight channel. The cost of lights will be no more and possibly less than for the straight channel.

In view of the facts and conditions set forth in this report and the report of the preliminary examination on this project, of the large amount of commerce which would be assisted, of the probable increase in the use of the waterway that would result therefrom, and of the added value that would be given the waterway as a whole by this improvement, I am of the opinion that the locality is worthy of and should be improved by the United States.

E. D. PEEK,
Captain, Corps of Engineers.

[First indorsement.]

OFFICE DIVISION ENGINEER, LAKES DIVISION,
Buffalo, N. Y., September 18, 1913.

To the CHIEF OF ENGINEERS, UNITED STATES ARMY:

1. The estimated costs of \$138,000 for a curved channel and \$155,280 for a straight channel, of which the straight channel would, in my opinion, prove to be the preferable, are considered incommensurate with the benefit such channel would secure, as compared with the existing channel, to the present limited, and prospective more limited, use of the Keeweenaw Waterway.

2. As stated in paragraphs 7 and 8 of the preliminary examination report, the through traffic amounts to about 1,000,000 tons of freight. It is for this traffic, carried on by fairly large lake vessels, that the improvement is sought; but "it would not as a rule divert the large class of vessels from the course in the lake, for the distance between Duluth and the Sault around the outside of Keeweenaw Point is 5 miles shorter than that through the waterway and admits of greater speed, but in time of rough weather some of them might be glad to use the waterway for its shelter * * *."

3. The local traffic, amounting to about 1,400,000 tons of freight, is carried on by small vessels; and the average net registered tonnage of all vessels is only about 1,200 tons.

4. In view of the foregoing, Keeweenaw Waterway is not considered worthy of improvement by the United States to the extent of making a cut-off at Princess Point.

J. G. WARREN,
Colonel, Corps of Engineers.

LETTER OF MR. JOHN H. DARLING.

DULUTH, MINN., *November 29, 1913.*

GENTLEMEN: Regarding the project of constructing a cut-off at Princess Point on the Keweenaw Waterway, I have seen in the daily press your public notice issued under date of November 24, 1913, and regret to find that the present opinion of your board is unfavorable to such improvement.

For some years past I have been strongly of the opinion that the proposed cut-off was greatly needed in the interests of commerce and navigation and was worthy of being undertaken by the Government. As an interested citizen I will respond to the invitation given in your public notice by submitting the following statement:

It is true that the outside course from Duluth to the Soo is 5 miles shorter than by way of the waterway, and of course would be preferred by the larger vessels in ordinary weather or in moderate storms; but more of the large vessels would pass through the waterway, if it were unimpeded by the sharp turn, in time of heavy weather, for the greater safety it would afford while passing through, and for the opportunity to tie up and wait for weather if so desired.

The sharp turn at Princess Point is more of an obstruction than can be judged from even the considerable number of groundings that have been reported at that point, for the larger vessels have learned to avoid that portion of the waterway, and those having business at Houghton, Hancock, or Lake Linden, destined for the lower lakes go out at the upper entrance and around Keweenaw Point rather than take chances of running on the bank at Princess Point. The Mutual Transit Co. some two years ago, after a costly accident at Princess Point, ordered all their larger steamers to go out the north way. This means an increase of from 21 to 36 miles, dependent on the point of shipment on the waterway, and a corresponding loss of time.

Vessel masters say the turn is too short for a ship 350 feet or more in length, or for vessels of the full draft allowed at the Soo Locks. There are many of the larger vessels that have occasion to use the waterway. The local commerce alone included in 1912, 1,205 vessels with a total registered tonnage of 1,440,086, and the local commodities included more than a million tons of coal for the several ports on the waterway. Coal is usually carried in large vessels, from 400 to 600 feet in length, which load with iron ore at Duluth, Two Harbors, Ashland, or Marquette for the return trip. Many of the package freighters which load with copper to the amount of about 75,000 tons, and other freight, are also large boats.

The coal alone if carried on the large ore vessels with full loads would make more than 100 cargoes of 10,000 tons each, but these are barred by Princess Point unless they go around the lake to the upper entrance. If carried on smaller vessels with less draft and smaller loads to suit the present condition of the river, it means probably twice the number of cargoes and trips, with increase in cost and other disadvantages on account of the restrictions.

Some of the smaller or medium sized vessels which can make the turn at Princess Point can do so only by daylight, or at least do not care to try it by night, and if they reach the river at night they wait until daylight before running the channel. This means a delay of one to eight hours of valuable steamboat time.

There were 2,280 vessels of all classes which used the waterway for through and local commerce in 1912, with an aggregate registered tonnage of 2,393,856, or an average of a little more than 1,000 net registered tons each. This average size is quite large and would indicate that a considerable proportion of the vessels were of the larger class and large enough to be more or less hindered by the obstruction at Princess Point.

As to the monetary loss to commerce occasioned by the obstruction at Princess Point, in delays, reduced size of cargoes, groundings, or by increased distance in reaching destination, it is difficult to make an estimate, but I am of the opinion that it amounts to as much as ten or twenty thousand dollars a year. Besides this is the ever-present risk, fear, and annoyance to those vessels which run the river without accident. On the other hand, the annual cost of the proposed improvement in interest at 4 per cent on the estimated cost of construction and 1 per cent for depreciation, which would be small on account of the almost indefinite life of the completed work, would be only \$6,800. There would be no cost of maintenance in addition to the present maintenance of the waterway as the new channel would be substituted for the old, excepting that a few shoals might have to be removed during the first two or three years after construction on account of the wash of vessels, at an estimated annual cost of \$1,000. The benefits to be derived would therefore, on the above basis of comparison, outweigh the cost of the improvement.

Under present conditions Portage River is available only for vessels of a smaller size and draft than the waterway was built for. The channel has a depth of 20 feet

or more throughout its entire length, a depth somewhat better than that at the Soo Locks, but most of the vessels loading to this draft are too long to make the turn at Princess Point and so are barred from using the channel by this obstruction. The proposed cut-off is therefore necessary to render the channel fully effective to its intended capacity.

Very respectfully,

JOHN H. DARLING.

BOARD OF ENGINEERS FOR RIVERS AND HARBORS.

LETTER OF MR. J. C. EVANS.

ANCHOR LINE, LAKE AND RAIL,
Buffalo, N. Y., December 15, 1913.

GENTLEMEN: Your public notice of November 24, to whom it may concern, all in connection with making a cut-off at Princess Point, Portage Lake. Our company have been operating through the Portage district, westbound and eastbound, for a great many years, and I feel that from the observations of our representatives and masters that we are in a position to intelligently urge the great commercial necessity for the marine interests generally to have an appropriation authorized for making a straight channel through Princess Point, at an estimated cost, as I understand, of about \$135,000.

Our 5,000-ton freight boats, drawing 18 feet of water or more, being some 400 feet long, 45 feet beam, as well as our passenger boats, drawing when loaded say 18 feet of water, 45 feet beam, are in the habit of going through Portage district, westbound and eastbound, right along on their trips to and from Duluth. Therefore we inclose for your notice letters from several of our different masters as to the necessity of the proposed cut-off. We also inclose letter from our local agent, C. O. Berglund, of Houghton; also letter from J. C. Thomson, who for many years was the Anchor Line agent at Houghton and Hancock. We also inclose record of groundings and mishaps to vessels in trying to get around Princess Point last season.

If any one of your honorable board would take a trip on one of our boats or on any large 600-foot ore carrier it seems to me that you would readily see the necessity for the proposed cut-off. This is not a theory; to our mind it is an actual necessity, and I know from my own observation how dangerous the present turn is and what a detriment to navigation the present conditions are. I feel assured that if the cut-off was made you would find a great many boats on their westbound trips, especially to Duluth, would use the Portage Lake gateway. Eastbound, under certain conditions of the weather, a great many of the deep-laden grain boats would also use the Portage gateway, provided the cut-off was made.

The letters attached are from our masters, who have been with us for many years and actually know from experience what they are talking about and as to the necessity of the proposed cut-off.

We respectfully submit the views of our masters and representatives and would urge that an appropriation be recommended by your board.

I feel, in connection with the wonderful improvements that have been made by our Government from time to time as to deepening and straightening channels of the Great Lakes, that a very important link has been left out until the proposed cut-off through Princess Bend is made and the channel is straightened. I can not see, from what I know of the situation, having been purser one year on one of our own boats, that a single argument could be raised by anybody against the proposed cut-off, and a great many arguments can be given as to why an appropriation should be made and why the channel should be straightened at that point.

The Portage Canal is a Government waterway and the point at present is a menace to navigation, and the turn at Princess Point is a difficult one to make, especially for eastbound boats. Of course we can get around it and we do every season with but few accidents, but all times we are liable to an accident not only to ourselves but other boats that we may meet at or near the bend, and on account of the insufficient room at that point we are not in a position to get away from that liability.

Yours, truly,

J. C. EVANS,
Vice President and General Manager.

BOARD OF ENGINEERS FOR RIVERS AND HARBORS.

LETTER OF MR. J. C. THOMSON.

MILWAUKEE, WIS., *December 3, 1913.*

DEAR SIR: I have your favor of the 28th ultimo, attaching public notice from the War Department, Board of Engineers for Rivers and Harbors, dated Washington, D. C., November 24.

There is no doubt that the consensus of opinion of all vessel industries and with the industries connected with the lake traffic to and from Duluth will certainly be in favor of any improvements that can be made in the Portage River connecting Lake Superior by way of Portage Entry and Lake Superior ship canal cutting off the dangerous Keweenaw Point. With the straightening out of Princess Point it would enable a larger class of vessels to take advantage of the severe storms especially in the spring and fall, avoiding the dangerous run around Keweenaw Point and, in fact, make a short cut-off from Portage Entry to the ship canal one large harbor of refuge.

The Government during the last 20 years has certainly made vast improvements through this Keweenaw gateway that has been very valuable not only to lake traffic but to all interests that come in contact with these lines of transportation. If a record, which no doubt could be obtained from the United States Government officials in charge of the ship canals through Keweenaw Point, of the number of boats seeking shelter in the Portage River and upper canal, it no doubt would give a fair estimate of the amount of tonnage that was protected by the improvements made through this canal. The still larger improvements that could be made by the Government by straightening out this dangerous and complicated condition, known as Princess Point, in the Portage River, it would enable the Government to point with pride to an improvement that would be beneficial in the development of lake traffic and protection of life and property.

A large number of steamers would rather, under the present conditions, be encountered by the dangerous run around Keweenaw Point than take any risks of a congestion being caused by the Portage River on account of the narrowness and possible chance of grounding and serious delays in making the turn around Princess Point coming in or out of the Portage River.

By cutting off this Princess Point it means a permanent improvement that will be of very little expense to the Government to maintain after it is once installed. I do not think that the distance between Duluth and the Soo is a question that should be taken into consideration with this improvement, but, as I stated before, by making this cut-off it is possible for steamers to continue on their trips and make good weather without encountering loss of lives and property.

I think it is a necessity and not a convenience and I hope that due consideration will be given this matter before the Government decides to reject the necessary improvements at Princess Point.

The improvements made by the Government to date in the Portage River and at the Lake Superior ship canal has opened up a mining country and developed an industry that is far beyond expectations that were thought of at the time the improvements were made.

By widening the Portage River, straightening this aforesaid Princess Point, it will give the Government a natural and direct harbor in the length of about 25 miles from Lake Superior from the Portage Entry side to the outlet of the ship canal and harbor at the upper end.

Yours, truly,

J. C. THOMSON, *Agent.*

Mr. J. C. EVANS,
Buffalo, N. Y.

LETTER OF MR. C. O. BERGLUND.

HOUGHTON, MICH., *April 14, 1913.*

DEAR SIR: I have a copy of communication from you dated March 22, 1913, to our vice president and general manager, Mr. J. C. Evans, Buffalo, N. Y. The communication in question was sent to me for my comment, and in regard to same wish to say that the cutting off of Princess Point by dredging a channel across same would be a highly desirable improvement, both in the way of facilitating the safe navigation of vessels through the waterway and to help increase the already large commerce of this locality as shown by 1912 report of Mr. Banks, junior United States engineer, issued under your supervision showing local and through marine commerce using the Portage Lake and River waterway, runs into the millions of tons and the value of many more millions of dollars. One great reason why this waterway is not used even more has been

because of the danger to vessels making the turn at Princess Point. Large vessels heavily loaded could only make this turn in daylight and then only at the risk of grounding or in the case of meeting another vessel, of collision. As to night navigation of the channel, not one captain in fifty would undertake it, and then only under the most favorable conditions like a moonlight combined with calm weather. When a captain arrives at Portage Entry after dark they usually anchor and wait until daylight to come up through the river. This results in a considerable loss of time. In many cases rather than come up through Portage Entry, captains prefer going around Keweenaw Point and coming in through the canal rather than going around Princess Point. This is particularly the case when weather conditions are not favorable or when boats are heavily loaded. Many times eastbound boats rather than round Princess Point go out the way they came in, viz, through the canal and go around Keweenaw Point. It is obvious that this procedure is costly. In the spring and fall of the year many more vessels seeking shelter would go through this waterway if they did not have Princess Point to contend with.

Since I came here in 1909 our boats have had one collision and two groundings at this point, viz, Steamer *Mahoning* collided with barge *Athens* in tow of the steamer *W. S. Mack* on April 28, 1910, steamer *Octorara* on May 30 of the same year grounded, and steamer *Conemaugh* grounded on June 3, 1911.

For marine commerce the Portage Lake and Torch Lake towns are receiving, shipping, and distributing points for the entire Keweenaw Peninsula with its population of approximately 100,000 people, and all industries are in great degree dependent upon lake shipping, and the desired improvement when same has been realized should add greatly to the successful carrying on of industries and all commerce in this section, and I would therefore urge that the preliminary survey authorized in the river and harbors bill passed by the last Congress be made as early as possible so that the next Congress will be enabled to pass the necessary appropriation for making the improvements needed.

Very respectfully,

C. O. BERGLUND, *Agent*.

Capt. E. D. PEEK, *Corps of Engineers*.

HOUGHTON, MICH., November 26, 1913.

DEAR SIR: I hand you herewith public notice from the War Department, Washington, D. C., dated November 24, with reference to proposed cut through Princess Point, which is self-explanatory. After all the reasons given by vessel men and others interested in the project, it is a matter of astonishment to me that the Government officials should take the view outlined in this notice referred to for various reasons. Replying to their objections:

(a) Although the distance between the Soo and Duluth is slightly greater than around Keweenaw Point, yet many more vessels would be induced to take this waterway if Princess Point was cut off. It is pertinent in this connection to point out the fact that after nearly every big storm vessels are wrecked on Keweenaw Point, which was forcibly illustrated in the big storm of less than three weeks ago, and in case of bad weather indications, large vessels could positively go through this way if they were not afraid of rounding this point. I would in this connection cite a personal experience, when returning from Marquette, August 23 last, on steamer *Octorara*, while rounding Princess Point we were carried against the west bank by the wind and current, although the wheel was hard-a-port. Capt. Martin can recite the particulars.

(b) This paragraph lacks a few words of expressing itself fully. I would add the words to this paragraph, "but only at risk and loss of time."

(c) I would ask: Is not convenience in this case really a necessity?

(d) As to estimated cost, although considerable, it is not, in my opinion, out of proportion to the benefit to be derived from the improvements. The Government thinks nothing of spending millions of dollars on St. Marys River and other waterways, in improvements, and when one considers the traffic through this waterway, both local and through, and possibility of much more through traffic if the waterway is improved, then I venture the opinion that there has been less money spent on this waterway for improvements, I dare say, than on any similar waterway on the Great Lakes, and I think it would be to vessel men's interest in general, and the package freight lines and others doing business here locally in particular, to bring the necessary pressure, influence, and arguments to bear, with the view of favorable action on the part of the Government.

Yours, truly,

C. O. BERGLUND, *Agent*.

Mr. J. C. EVANS, *Vice President and General Manager*.

NOVEMBER 28, 1913.

Groundings and accidents at Princess Point that have been reported to the U. S. Engineer Office, Houghton, Mich., and does not take in those vessels that have touched the bank while making the turn and did not report the occurrence, from the opening of navigation season for 1913 up to the present time:

	Lost time.
May 18. Schooner <i>Aurora</i> , in tow of steamer <i>Lackawanna</i> , bound up loaded, ran aground on west side of channel opposite Princess Point. The schooner was released by tug <i>Shelden</i> in 5 hours.	5 hours.
May 29. Schooner <i>Athens</i> , in tow of steamer <i>Veronica</i> , bound up loaded, ran aground on east bank of channel at lower side of Princess Point. The schooner was released by steamer and tug <i>Hebard</i> in 23 hours. In making the turn at Princess Point the vessel sheered and the captain dropped his anchor to straighten the vessel up, the anchor stock broke off, leaving the flukes in bottom of channel. A diver and outfit was employed by Government and anchor recovered at a cost of \$45, not including Government plant employed.	23 hours.
June 29. Schooner <i>Aurora</i> , in tow of steamer <i>City of Berlin</i> , bound up, ran on east bank of channel on upper side of Princess Point. The schooner was released by tug <i>Hebard</i> after lightering off about 255 tons of coal. The vessel was on 57 hours.	57 hours.
July 23. Schooner <i>Aurora</i> , in tow of steamer <i>City of Berlin</i> , bound up, ran aground on west side of channel opposite Princess Point. The schooner was released by the tug <i>Shelden</i> after being on 17 hours.	17 hours.
September 21. Steamer <i>Juniata</i> , bound up, ran aground on west bank of channel opposite Princess Point. Steamer released herself after being on about 13½ hours.	13½ hours.
September 22. Steamer <i>Eugene Buffington</i> , bound up, ran aground on west bank of channel opposite Princess Point. The steamer released herself in about 2 hours.	2 hours.
Total.	117½ hours.

LETTER OF MASTER OF STEAMER "OCTORARA."

DULUTH, November 29, 1913.

DEAR SIR: Regarding the proposed improvement at the Princess Bend, Portage Entry, I have been up and down through the Portage Entry about 200 times in the last 10 years, I have grounded the steamer about 20 times trying to make the turn around the Princess Bend, I can't count the number times I have dropped the anchor to work the steamer around the Princess Bend, and yet this is called an improved channel. The distance from the Soo to Duluth through the Portage Entry is only about 5 miles longer than going around Keweenaw Point; this 5 miles longer is not the cause of other captains not coming through the Portage Entry with their steamer, it is the chance of them grounding with their steamer at Princess Bend. The Princess Bend is cause of great number of steamboats not going through the Portage Entry.

Very respectfully, yours,

EDW. MARTIN,
Master Steamer "Octorara."

Mr. J. C. EVANS,
Vice President and General Manager, Anchor Line,
Buffalo, N. Y.

LETTER OF MASTER OF STEAMER "JUNIATA."

ERIE, November 29, 1913.

DEAR SIR: Your letter of November 26 received in relation to the new channel across Princess Point, Portage River, Mich. I consider this improvement is necessary as the traffic is greater each year into Portage. It is almost impossible to pass another boat in the present channel at Princess Point if we should meet there, and there are a number of large boats pass up through this channel with coal for Houghton and Lake Linden who could not return through the same channel with a cargo, as

they could not make the bend at Princess Point east bound on a starboard wheel. With this bend straightened the largest boats on the lakes could pass through Portage, but they can not at present.

Yours, truly,

ANGUS MCKENZIE,
Master Steamer "*Juniata*."

Mr. J. C. EVANS,
Vice President and General Manager Anchor Line,
Buffalo, N. Y.

LETTER OF CAPTAIN OF STEAMSHIP "*TIONESTA*."

DULUTH, November 28, 1913.

DEAR SIR: Referring to letter from Board of Engineers for Rivers and Harbors, on Portage Lake entry through Keweenaw Point. I can say that at Princess Bend is the hardest piece of water we have to contend with; for a ship of the *Tionesta's* size we take the full swing of the bend to make it, and can not attempt it at all if there is another ship of ordinary size approaching from opposite direction, in which case we have to stop our way and in doing so drift onto the bank, and in doing so this obstructs the channel completely. This has happened to us on the steamer *Tionesta*, and with the loss of time when we are on schedule time during the passenger months, not to mention the risk of damage we may do in case the current would carry our stern around (for there is more or less current one way or the other), would do big damage to a ship's stern besides blocking the channel, as so often has been the case. There have been several collisions on the bend, which have blocked the channel, and many ships of ordinary size fail to make the swing owing to the current, which varies, and at Princess Point it cuts through stronger than at any other place in the entry. There are some of the largest bulk freighters trading into Portage Lake, and to make this bend it has taken them more than an hour to make the bend, as they have to back and fill several times to make it, and much longer if they bring up on either bank, and more often they do.

Respectfully,

CAPT. JOHN DOHERTY,
Steamer "*Tionesta*."

Mr. J. C. EVANS,
Vice President and General Manager.

LETTER OF CAPTAIN OF STEAMSHIP "*ALLEGHENY*."

CLEVELAND, OHIO, November 28, 1913.

DEAR SIR: In reply to your letter of the 26th, about Princess Point. It ought to be eliminated, for the following reasons:

First. If the wind is blowing 25 miles per hour or more from the west or northwest, it is next to impossible for ships of the type of *Tionesta* and *Allegheny* (3,500 tons and 5,000 tons, respectively) to pass it with safety. In nine times out of ten they would be blown against the bank, and as there are no tugs available in that vicinity much valuable time would be lost in consequence.

Second. In case two boats should happen to meet at the bend, one going east and the other west, with the wind blowing as described above, it would be impossible to pass, and such a condition would make it hazardous for both boats, for there isn't room to anchor. In case we did anchor, the boat's stern would be blown upon the bank, thus damaging the rudder, etc.

Third. Regarding a larger number of boats going around Keweenaw Point than through the Portage River, as is the case at present. This is caused purely from the fact that Princess Point is the real cause. With the wind northwest boats bound west could proceed O. K. via Portage, whereas only a few of the best boats would attempt going around Keweenaw Point, the balance having to anchor on the east side of Keweenaw Point, thus losing valuable time.

I trust I have made the matter clear to you, and sincerely hope the point will be eliminated.

Yours, very truly,

H. CRONKHITE,
Captain Steamship "*Allegheny*."

Mr. J. C. EVANS,
Vice President and General Manager, Buffalo, N. Y.

LETTER OF MR. CHAS. NELSON.

MILWAUKEE, *December 6, 1913.*

DEAR SIR: I have your letter of November 26, in regard to Portage River channels, etc., and think the Government should start improvements there without delay. I don't know why the Board of Engineers calls the widening and straightening of the river from Princess Point to deep water in Portage Lake a convenience instead of a necessity. The increasing yearly traffic through Portage Lake, as shown by reports of tonnage, ought to warrant the channels being kept in a condition to be navigated night as well as day. As it is now, the larger class of vessels will not try to get out of the lower river after dark, the narrow crooked channel from Portage Lake to Princess Point being the cause.

Respectfully,

CHAS. NELSON, *Steamer "Delaware."*

Mr. J. C. EVANS,
Vice President and General Manager.

LETTER OF CAPTAIN OF STEAMER "WISSAHICKON."

ERIE, *November 30, 1913.*

DEAR SIR: Answering yours of the 26th instant, in regard to improvement of Princess Point, it is a work that is very much needed. I regard the turn as dangerous for the class of boats that ply through this channel now; also the channel above the point making out into Portage Lake. By all means I would recommend improvement.

Yours, truly,

GEO. J. DELANEY,
Captain Steamer "Wissahickon."

Mr. J. C. EVANS,
Vice President.

LETTER OF MASTER OF STEAMER "MUNCY."

ERIE, PA., *November 29, 1913.*

DEAR SIR: Your letter in regard to Princess Point, Portage River, received. I think the river at that point should be improved, either the point cut off more or a straighter channel cut across it, and the river widened above it on 14 and 15 ranges. The river at that point is a sharp turn of 95°, making it very difficult even for medium-size vessels to make the turn, and when meeting another boat one must go on the bank in order to avoid collision. The report says the through route is a little longer through the waterway, and large vessels would not be diverted to it. In the fall nearly the largest vessels go through that way for shelter, and I am positively sure more of them would take advantage of it if the river was widened and this particular bend straightened. In my experience going through there, the Government has done less for the improvement of the Portage River from east entry to Portage Lake than any other important waterway, and I consider this as an important a waterway as there is on the Lakes. I think everything should be done to show the division engineer this improvement is very necessary.

I am, respectfully, yours,

M. BOGGAN,
Master Steamer "Muncy."

Mr. J. C. EVANS,
Vice President and General Manager.

LETTER OF HON. WM. ALDEN SMITH.

UNITED STATES SENATE,
December 15, 1913.

GENTLEMEN: I take pleasure in handing you herewith some data which has just been sent to me, relative to the Princess Point cut-off, Michigan, and would be glad to have you give the same most careful consideration.

With personal regards, I am,
Very truly,

WM. ALDEN SMITH.

BOARD OF ENGINEERS FOR RIVERS AND HARBORS.

LETTER OF CORRESPONDING SECRETARY COPPER COUNTRY COMMERCIAL CLUB.

COPPER COUNTRY COMMERCIAL CLUB,

December 11, 1913.

DEAR MR. SMITH: In response to your kind favor of December 8, I will endeavor to state briefly further reasons for urging the Board of Engineers for Rivers and Harbors to change its decision relative to the Princess Point "cut-off."

Annual reports compiled by Mr. George H. Banks, junior engineer in charge of the Keweenaw Waterway, indicate that in the 10 years ending December 30, 1912, 72,488 vessels, carrying 38,191,144 tons of freight, valued at \$1,235,049,592, made use of the Portage Lake Ship Canals. These figures do not include those vessels engaged in purely local commerce, i. e., trading between ports within the Keweenaw Waterway, nor do they include more than a million dollars' worth of logs which were rafted through the canals during the decade. The value of commerce passing through Portage Lake in each of the years 1906 and 1907 exceeded \$100,000,000. In 1912, an "off year," the value of Portage Lake commerce was \$86,582,812.

Practically all of the freight received at or shipped from Portage Lake ports enters interstate commerce. For instance, there was received during 1912, 1,111,983 tons of soft coal, valued at \$3,335,949, all of which originated at lower lake points. There was shipped from Portage Lake 83,231 tons of refined copper and mineral, valued at \$26,197,680, all of which was destined for lower lake or Atlantic seaboard points. The copper country manufactures very little iron, but there was handled through Portage Lake in 1912, 119,656 tons of manufactured iron, valued at \$4,265,736. Of flour, none of which is manufactured in the copper country, there was shipped through the Keweenaw Waterway \$8,878,751 worth. More than \$3,000,000 worth of wheat and over \$34,000,000 worth of miscellaneous merchandise, all of which entered interstate commerce, was carried through the local canals in 1912.

During the same year of 1912 there passed through the local waterways 31,760 passengers, fully 95 per cent of whom were traveling interstate.

These statistics are quoted to prove that any aid to Portage Lake commerce is an aid to interstate commerce. Any improvement to local waterways will be of greater benefit to the marine interests engaged in interstate commerce than it will to our local vessel men, who are comparatively few, and who have little occasion in Portage Lake traffic to use the channel circling Princess Point.

Capt. E. D. Peek, of the Engineer Corps, in charge of harbor improvements on Lake Superior, in submitting his annual report for 1912, says:

"It will be noted that there was a heavy commerce during the late months of October and November, which is the stormy season. This shows that the waterway is much used for refuge."

The vessels using the Keweenaw waterways for refuge, which include many of the largest sailing the Great Lakes, are not engaged in local nor through traffic which calls for their entering the local canals. They make use of the waterways purely as a harbor of refuge during heavy weather, and by so doing have saved the vessel interests of the Great Lakes many millions which would otherwise have been lost through wrecks in rounding Keweenaw Point, and have prevented the loss of scores of lives.

Returning to the improvement itself. This consists of cutting a curved channel across the neck of Princess Point. It has been estimated that this work would cost \$138,000. It is believed that this estimate has allowed for many emergencies, as it has been held that the expense need not exceed \$120,000. If \$138,000 is appropriated any amount in excess of the actual cost will be automatically returned to the general fund. It is contended upon reliable authority that the expense of maintaining the cut-off will be less than the cost of dredging and freeing from obstructions the present channel, which, because of the nature of the banks, is continually shifting.

The cost, benefits considered, is trifling. Larger sums have been spent upon insignificant harbor improvements affecting a very small fraction of the commerce which will profit from the betterment of the Keweenaw waterways at this point. There is not a vessel interest on the Great Lakes which does not recognize the necessity of this improvement. There is not a vessel interest on the Great Lakes which will not unreservedly indorse the making of the small appropriation requested.

You are already in receipt of a list of arguments in reply to the objections proposed by the Board of Engineers. The club has also supplied you with a list of the groundings which have occurred at Princess Point this season, since the preliminary inspection was ordered. I am inclosing herewith a record of all the groundings and delays which have been reported to the engineer in charge. Many vessels have succeeded in freeing themselves after several hours' work and have made no report to the engineer.

Above all, the club desires to impress upon the Board of Engineers for Rivers and Harbors that this is not a "pork-barrel" project. The people of the copper country

have asked for very little and have received less in the way of improvements to the local waterways. In spite of their great importance in Great Lake commerce, the cost to the Government of the Portage Lake Canals has been small. We are not asking much now, and what we ask will prove of greater benefit to interests outside of the copper country than to any at home. We feel, therefore, that we are entitled to earnest consideration, and that the Board of Engineers must, after a careful judgment of the facts and arguments submitted, render a favorable verdict.

We thoroughly appreciate your efforts in our behalf, and we trust that if there is anything further in the way of information which we can furnish you, you will call upon us. If you think it advisable, we have here public-spirited men who will gladly bear the loss of time and the expense incident to a trip to Washington. But we feel, as you have stated, that facts alone should be considered, and that no number of citizens, no matter how large, would have any real effect upon the Board of Engineers.

Thanking you again for the interest you have taken, and hoping that we may hear from you if you desire additional information, I am,

Yours, very truly,

G. L. PRICE,
Corresponding Secretary.

P. S.—I am inclosing under separate cover United States Engineer Banks's report for 1906, the supply of 1912 reports being exhausted.

Hon. WM. ALDEN SMITH,
United States Senate.

GROUNDINGS AT PRINCESS POINT FROM 1908 TO 1913.

July 30, 1908, steamer *A. B. Wolvin*, net tonnage 5,311, size 540 by 56 feet, ran aground; released herself in about 1 hour. Broke her seacock on the bank and was taking in water when she got off.

September 5, 1908, schooner *A. W. Thompson*, net tonnage 2,125, size 300 by 42 feet, ran aground; released by tug in about 1½ hours. No damage.

November 3, 1908, steamer *J. B. Eads*, net tonnage 2,970, size 400 by 43 feet, ran aground; released herself in about 1 hour. No damage.

May 12, 1909, steamer *North Wind*, net tonnage 1,885, size 299 by 41 feet, ran aground; released herself in about half an hour. Lost her patent anchor.

April 28, 1910, schooner *Athens*, net tonnage 1,953, size 293 by 45 feet. Steamer *Mahoning*, net tonnage 1,744, size 274 by 40 feet. Steamer *W. S. Mack*, net tonnage 2,785, size 346 by 48 feet. The schooner in tow of steamer *Mack* was run into by steamer *Mahoning* while passing at lower end of point; the timbers on port bow of schooner were cut in two and down to within 8 inches of the water; temporary repairs were made at Hancock.

May 30, 1910, steamer *Octorara*, net tonnage 2,652, size 340 by 45 feet, ran aground; released herself in about 4 hours by running lines to snubbing pile clusters. No damage.

July 10, 1910, schooner *Matazas*, net tonnage 2,525, size 324 by 45 feet, ran aground; was released by steamer *Amazonas* in about 4 hours. No damage.

August 14, 1910, steamer *Ontario*, net tonnage 4,153, size 444 by 56 feet, ran aground; released herself in about an hour. No damage.

October 1, 1910, steamer *G. J. Grammer*, net tonnage 3,703, size 434 by 48 feet, ran aground; released herself in about 4 hours by running lines to snubbing pile clusters. No damage.

May 12, 1911, steamer *Angeline*, net tonnage 3,538, size 414 by 51 feet, ran aground; released herself in about 4 hours by running lines to snubbing pile clusters. No damage.

June 3, 1911, steamer *Conemaugh*, net tonnage 2,967, size 352 by 46 feet, ran aground; was released by tug in about 4 hours. No damage.

August 23, 1911, tug *D. L. Hubbard*, net tonnage 80, size 98 by 22 feet, ran aground; was released by tug in about 10 hours. No damage.

August 26, 1911, steamer *City of Berlin*, net tonnage 1,711, size 298 by 41 feet, ran aground; released herself in about 1 hour. No damage.

October 24, 1911, steamer *North Star*, net tonnage 2,928, size 350 by 46 feet, ran aground; released herself in about 2½ hours by running lines to snubbing pile clusters. No damage.

November 2, 1911, tug *Moose*, net tonnage 56, size 58 by 14 feet, ran aground and broke her shoe on east bank; was released by tug *Hebard* and towed to Duluth for repairs.

October 29, 1912, steamer *Eugene Zimmerman*, net tonnage 4,772, size 480 by 52 feet, ran aground; released herself in about half an hour. No damage.

LETTER OF HON. WM. ALDEN SMITH.

UNITED STATES SENATE,
December 18, 1913.

GENTLEMEN: I take pleasure in handing you, herewith, another letter which I have just received from Mr. George L. Price, of Houghton, Mich., in regard to the Princess Point cut-off, and I trust you will give his suggestions careful consideration.

With kind regards, I am, very truly,

WM. ALDEN SMITH.

The BOARD OF ENGINEERS FOR RIVERS AND HARBORS.

LETTER OF CORRESPONDING SECRETARY COPPER COUNTRY COMMERCIAL CLUB.

COPPER COUNTRY COMMERCIAL CLUB,
December 15, 1913.

DEAR MR. SMITH: Referring further to the matter of the Princess Point cut-off, in which you have kindly interested yourself, permit me to call your attention to the following additional facts in favor of this improvement:

In taking a course from Whitefish Point with a view to rounding Keweenaw Point, vessels encounter a head wind for almost the entire distance, the prevailing movement during the season of navigation, as shown by reports of the local weather bureau, being from the north to the south. Vessels in ordinarily fair weather lose time in breasting this wind. In rough weather they assume an unnecessary risk, or a risk which would not be necessary were it possible for them to take their course northwest by west to Portage Entry and make use of the sheltered Keweenaw Waterways.

A harbor of refuge near the entry to the Keweenaw Waterways is regarded as practically assured. The Federal Government will spend a considerable sum in this improvement, which will be of great benefit to vessel interests of the Great Lakes, providing their boats can make this refuge without too great loss of time. If the channel at Princess Point is allowed to remain in its present treacherous condition, the larger vessels will risk the rigors of a storm on the big lake rather than to take refuge in the harbor and then, when the seas have gone down, lose many hours time by doubling back out of the entry and around the point. If the channel at Princess Point is made navigable for the larger vessels, boats taking refuge in the harbor may continue their journey through the waterways to the west coast of Keweenaw Point, and, when the storm subsides, they will find themselves several hours nearer their destination. Vessels bound down the lakes will find a similar advantage in entering the canals at their upper end and running through to the harbor of refuge at the entry, lying over there until the rough weather abates.

The engineer who made the preliminary inspection and whose report is made the basis for the unfavorable decision of the Board of Engineers for Rivers and Harbors unfortunately passed through the canals on a very small boat, which, naturally, maneuvered the channel at Princess Point with comparatively little difficulty. Had he made the voyage upon one of the vessels ranging from 300 to 600 feet in length, regularly engaged in commerce with local reports, he would have been in better position to judge of the necessity of this improvement, and, we are sure, his report would have been of an entirely different nature. The club is not criticising this very worthy servant of the United States Government; it is merely pointing out a possible reason for his being unable to appreciate the importance of the Princess Point cut-off, when every vessel interest on the Great Lakes is thoroughly convinced of its necessity.

We regret the necessity of burdening you with so much correspondence in relation to this matter, but it is one in which the club and the entire copper country is vitally interested, and we desire to leave undone nothing which will serve to further this very worthy project.

Again thanking you for the interest displayed, I am,
Yours very truly,

G. L. PRICE,
*Corresponding Secretary.*Hon. WM. ALDEN SMITH,
United States Senate.

LETTER OF SECRETARY, PUBLIC AFFAIRS COMMITTEE OF THE COMMERCIAL CLUB OF DULUTH.

PUBLIC AFFAIRS COMMITTEE OF THE
COMMERCIAL CLUB OF DULUTH,
Duluth, December 19, 1913.

GENTLEMEN: At a regular meeting of the public affairs committee of the Duluth Commercial Club held on the 16th day of December, 1913, a report was received from the subcommittee on harbors and waterways recommending the improvement of the Keeweenaw Waterway by a cut-off at Princess Point.

The public affairs committee at said meeting unanimously approved the recommendation of the subcommittee. This project has been pending for several years and has received the approval of three United States engineers in charge of this district. These men have been in position to post themselves as to the local requirements and the benefits to the Lake Superior commerce.

If correctly informed, the reasons given by your board that the War Department do not undertake this improvement are:

"The distance between Duluth and the Soo through the waterway is slightly greater than around the outside of Keeweenaw Point and it is not probable that many of the larger vessels would be diverted from the outside route." It is true the larger boats would prefer to run outside of Keeweenaw Point during fair weather, but during the rough weather provided there would be a good inside passage, they would save time by using it, as the difference is only 5 miles. When you consider that the sharp turn at Princess Point will interfere with the navigating of vessels 350 feet in length, you must consider that a large part of lake traffic is compelled to take the outside route.

Your board states that "the improvement would be in the nature of an added convenience to navigation rather than a necessity. Any improvement that will assist vessels to make quicker passage during rough weather, at the same time offer a harbor of refuge, is a necessity rather than a convenience.

The estimated cost of this work, \$138,000, is small when taking into consideration the great benefits which would result to vessels passing to and from the west end of Lake Superior, together with water traffic to Houghton, Hancock, and vicinity.

The Keeweenaw passage is located at just the right point on the south shore for a harbor of refuge, and during rough weather would be used to a much greater extent by all kinds of vessels provided this Princess Point cut-off be made and the passage can be safely navigated.

The improvement of the Canadian canals will bring increased Lake traffic in moderate-sized vessels and barges, making a greater necessity for a harbor of refuge on the south shore of Lake Superior.

We desire to call to your attention the recent report by General Bixby, showing the Duluth-Superior harbor second only to that of New York in amount of tonnage handled, and these small improvements should be approved by your board in consideration of the large commerce benefited.

The letter of November 29, 1913, by John H. Darling, esq., of Duluth, sent your board, has been read to this committee and is strongly indorsed by us, and we ask that great weight be given to the facts stated therein as coming from one who has been familiar with this project from the beginning.

We do not ask for a hearing, but should one be ordered by your board we should be pleased to be informed in regard to same. We trust your honorable board will reconsider your report and recommend the improvement asked for in the interest of Lake Superior traffic.

Yours, respectfully,

H. V. EVA, *Secretary.*

BOARD OF ENGINEERS FOR RIVERS AND HARBORS.

TELEGRAM OF PRESIDENT OF LAKE CARRIERS' ASSOCIATION.

DETROIT, MICH., *December 23, 24, 1913.*

Our Lake Carriers' Association are very strongly in favor of the cut-off at Princess Point, Portage River. We believe it would be of great benefit to the shipping interests in the fall. Our largest class of boats could use this channel. In view of the recent marine disaster on the Great Lakes in November it may be advisable to have boats follow an inland route in going from Whitefish Point through Lake Superior via Portage River. Were it not for the present sharp turn, which is really an obstruction for large vessels, more of our vessels in time of heavy weather would use this channel. Our masters claim that the turn is too short for a ship over 350 feet in length or for vessels of full draft allowed at Soo Locks. We trust you will give the matter fullest consideration as to the benefits which would inure by making the channel suitable for our largest modern vessels.

W. LIVINGSTONE,
President Lake Carriers' Association.

The BOARD OF ENGINEERS FOR RIVERS AND HARBORS.



